



## JOINT EFFORTS TO SUPPORT THE FOUNDATION OF THE EDGE COMPUTING CONSORTIUM EUROPE (ECCE)

Analog Devices, Arm, Bombardier, B&R Automation, Fraunhofer Institute for Open Communication Systems (FOKUS), German Edge Cloud (GEC), German Research Center for Artificial Intelligence (DFKI), HARTING IT, HUAWEI, INNOVO Cloud, Intel, IBM, KUKA, National Instruments, Renesas, Schneider Electric, Software AG, Spirent, TTTech, and further partners announced at the Edge Computing Forum (ECF) 2018 their support of the planned formation of the Edge Computing Consortium Europe (ECCE) and its further refinement of the objectives ahead of a launch in 2019. The ECCE aims at saving research and development efforts by providing technology stacks for Edge Nodes based on existing, matched components to small, medium and large enterprises for the rising Edge Computing market in smart manufacturing and other Industrial IoT domains.

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## EDGE COMPUTING

The Edge Computing paradigm describes an approach to execute certain services closer to devices and thereby supplements centralized Cloud Computing solutions. Amongst others, such an architecture can enhance data privacy and lower network latency. The global Edge Computing market is estimated to be worth 3 to 18 Billion EUR until 2023 and an international Edge Computing eco system that takes European particularities into account would benefit all industrial application domains.

## ECCE

The planned Edge Computing Consortium Europe (ECCE) aims at supporting small, medium-sized and large enterprises in Europe and all around the world to adopt related technologies and in particular with a focus on the augmentation of Operational Technologies (OT) with Information and Communication Technologies (ICT). Its mission is to drive adoption of the Edge Computing paradigm within the manufacturing and other industrial markets. It will emphasize on utilizing and contributing to existing solutions, standards and initiatives to ensure that industrial needs and requirements are optimally addressed in member products.

Therefore, goals of this initiative include the specification of a Reference Architecture Model for Edge Computing (ECCE RAMEC), the development of reference technology stacks (ECCE Edge Nodes), the identification of gaps and recommendation of best practices by evaluating approaches within multiple scenarios (ECCE Pathfinders), and the synchronization with related initiatives/standardization organizations and the promotion of the results.

The consortium welcomes collaboration with more partners who are engaged in the action of digitalization verticals. For more information refer to the ECCE homepage at **<https://econsortium.eu>**.



**Brendan O’Dowd, Industrial Automation, Analog Devices, U.S.**

“Edge computing is fundamental to Analog Devices’ core business. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure, power, connect and interpret. ADI is participating in the ECCE because it provides a vision for unlocking the power of the Industrial Internet with a standards-based approach to interoperable, deterministic communication.”

**Mohamed Awad, Vice President of Marketing, Infrastructure Line of Business, Arm, U.K.**

“As we move to a world with a trillion connected devices, the magnitude of data is growing significantly and the Arm® Neoverse™ ecosystem is uniquely positioned to deliver on the diverse set compute requirements of the infrastructure. From the edge to the core datacenter, ecosystem collaboration in relevant industry initiatives, such as the ECCE, are fundamental to supporting the performance, security, and scalability required.”

**Dr. Yannick Fourastier, Head of Industry Digital Transformation, Bombardier, Germany**

“Edge Computing is a key technology aspect of cyber-physical systems in the data-driven era. Bombardier’s interests drive the company concern for appropriate standardization. As a global company, Bombardier is used to actuate with local ecosystem partners that can support the ECCE digital initiative to deploy a worldwide footprint. Bombardier will ensure the ECCE strategic advisory board produces appropriate global vision and key requirements.”



**Stefan Schönegger, Vice President Product Strategy and Innovation, B&R, Germany**

“We are fully convinced that Edge Computing will be essential for the factory of the future. Processing of data at the proximity of data sources will ideally complement IoT solutions based on public clouds. B&R is committed to quickly extend our Edge portfolio and provide a full scale, OPC UA and TSN based, Edge offering to the market. The ECCE is helping to align our activities with a rich ecosystem of valuable partners, which helps to accelerate adoption and drive innovation.”

**Prof. Dr. Thomas Magedanz, Director Software-based Networks, Fraunhofer Institute FOKUS, Germany**

“Europe is driving the innovation of major 5G industrial vertical domains, such as manufacturing and automotive. The availability of high performance, reliable and open edge computing platforms represents a key foundation for the establishment of a rich ecosystem for edge computing based industry solutions. This new European Edge initiative will fill the gap between existing industry initiatives and will enable German and European industrial partners to meet their business requirements enabled by edge computing in a faster and more economical way.”

**Dr. Sebastian Ritz, CEO German Edge Cloud (a Friedhelm Loh Group company), Germany**

“The German Edge Cloud and Rittal as early promoters of the edge cloud computing paradigm for the industrial sector actively supports the planned Edge Computing Consortium Europe. Edge Computing is a key enabling technology for the digital transformation of the industrial sector and vital for Germany’s and Europe’s future competitive position, especially in areas like industrial AI, which require edge computing. The proposed best practice approach of the ECCE will help guiding companies in adopting edge computing in a hands-on manner.”



**Prof. Dr. Martin Ruskowski, Head of Innovative Factory Systems (IFS), German Research Center for Artificial Intelligence (DFKI GmbH), Germany**

“The paradigm of edge computing is assuming shape in an increasing speed. However, our current industrial production has specific requirements as we have to deal with brown-field applications and existing real-time controllers and supervisory computers. In order for edge computing to be widely adopted in industry, a common reference model based on existing solutions such as the Plattform Industrie 4.0 RAMI or the SmartFactory-KL reference architecture is the necessary basis. The DFKI with its application partner SmartFactory-KL supports the ECCE as an industry-driven initiative to create a common understanding and architecture for edge computing.”

**Dr. Jan Regtmeier, Director Product Management, HARTING IT GmbH & Co KG, Germany**

“IIoT is the future of efficient industrial manufacturing. The possibilities of today’s computing are incredible. However, cloud alone is not the answer to all questions. Without the edge and edge computing, there is no data for condition monitoring and preventive maintenance. HARTING believes in the idea of edge computing. We have setup up a hybrid edge / cloud architecture in our own connector production facilities. Data becomes “smart data” right at the edge.”



**Swift (Shaowei) Liu, President of Huawei Network Solutions R&D Department, China**

“Edge computing is the important foundation for the construction of the Industrial Internet. It is a key technology for achieving digitalized, networked, and intelligent society. Huawei will work with companies in Europe and around the world, together with related industries and standardization organizations to promote the establishment of ECCE. The edge computing industry cooperation platform will promote the implementation of edge computing technologies and standards and the promotion of outstanding industrial achievements, and work together to promote the vigorous development of edge computing in Europe.”

**Reinhold Stammeier, Chief Digital Officer, KUKA, Germany**

“For KUKA, the Edge will play an important role, as it is pushed from two sides. First, the cloud is decentralizing down into the edge because the classic cloud has various disadvantages for the IIoT like being “too far away”, latency, bandwidth, transport costs, etc. Second, tasks that come from the devices will be centralized up in the Edge. For example, data filtering, pre-processing and concentration that is not component-related, but system-related, or the common programming and configuration of several devices such as robots controlled by an edge cloud controller.”

**Rahman Jamal, Business & Technology Fellow, National Instruments, Germany**

“A core capability of the National Instruments platform has always been open and interoperable connectivity with products from other vendors. We are proud of the role we are playing in general and by participating in the ECCE in particular to make OPC UA over TSN a premier offering for synchronized, deterministic communication; assuring that our customers can create interoperable test, measurement, and control systems.”



**Niels Trapp, Global head of marketing, Industrial Automation, Renesas Electronics, Japan**

“Renesas sees a strong demand for edge computing equipment in the factory floor in order to further accelerate the implementation of digitization of the manufacturing industry. Industrie 4.0, IIoT and other initiatives provide already a comprehensive operating models and testbeds of new technologies such as TSN and OPC UA. An initiative to specifically consider a role of edge computing under these operating models is required and necessary to position edge application properly and make equipment easy to integrate into brownfield and greenfield.”

**Fabrice Jadot, Chief Technology Officer, Schneider Electric, France**

“EcoStruxure is providing all means for Edge Computing to provide additional capabilities including the ability to predict problems before a fault occurs. Traditionally, machine learning runs exclusively in the cloud, but in many IoT scenarios that isn't good enough as there are a number of advantages or even constraints requiring the application to execute as close as possible to the field events. Whilst most of industrial controllers that exist in the market are reactive, their evolution is to become proactive and capable of including predictive analytics at the edge.”

**Frank Schiewer, SVP Alliance & Channel, Software AG**

“We couldn't be more excited to join the Edge Computing Consortium Europe. This initiative is an outstanding exchange platform of leading IoT players who will influence the future of edge computing and set common standards for all. As a market leader in Industrial IoT solutions, with our Cumulocity IoT platform, Software AG views our participation in this consortium to be a critical step in creating a shared knowledge base of ideas, a collaborative approach to exchange best practices from many successful engagements, and also an eco-system of forward-looking IoT leaders who will increase the value and practical use of edge computing – making it ready for prime time.”



**Wolfgang Leindecker, VP Sales & Marketing Industrial at  
TTTech Computertechnik AG, Austria**

“TTTech is very pleased to join the ECCE initiative. As a company we are actively engaged in developing edge computing solutions that are shaping the convergence of IT and industry. We believe that a standard approach to Edge computing and Fog/Cloud architectures is crucial to truly delivering on the promise of Industrial IoT.”